



Source Water Assessment Program (SWAP) Report For West Warren Water District

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? Inventory land uses within the recharge areas of all public water supply sources;
- ? Assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

Date Prepared:
January 26, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	West Warren Water District
PWS Address	Brimfield Road, Route 19
City/Town	West Warren, Massachusetts
PWS ID Number	2311001
Local Contact	Albert Lalashius
Phone Number	(413) 436-5692

Well Name	Source ID#	Zone I (in feet)	IWPA (in feet)	Source Susceptibility
Well #1	2311001-01G	400	2,400	Moderate
Well #2	2311001-02G	400	2,400	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contamination, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contamination the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

West Warren Water District obtains its water supply from two gravel packed wells. The wells for West Warren Water District are located on an elevation adjacent to the sand and gravel mining operation site. Each well has a Zone I of 400 feet and an Interim Wellhead Protection Area (IWPA) of 2,400 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

The wells serving the facility have soda ash added to the water to adjust the Ph. For current information on monitoring results and treatment and a copy of the most recent Consumer Confidence Report, please contact the Public Water System contact person listed above in Table 1.

Drinking water monitoring reporting data is also available on the web via EPA's Envirofacts website at http://www.epa.gov/enviro/html/sdwis/sdwis_query.html.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate Activities in Zone Is;**
2. **Agricultural Activities;**
3. **Transportation Corridor; and**
4. **Sand and Gravel Mining.**

The overall ranking of susceptibility to contamination for the well is moderate, based on the presence of at least one moderate threat land use or activity in the IWPA, as seen in Table 2.

1. **Zone Is** – Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone Is. The facility's Zone I contains passive recreational activities. The public water supplier owns and/or control all land encompassed by the Zone Is. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- 2. **Agricultural** - Cropland and pasture encompass greater than 25% of the total IWPA land area. This includes boarding stables with horses. If not contained or applied properly, animal waste from barnyards, manure pits and field application are

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Agricultural Activities – Manure storage	No	Both	Moderate	Manure (microbial contaminants): improper handling
Transportation Corridor	No	Both	Moderate	Fuels and other hazardous materials: accidental leaks or spills; pesticides: over-application or improper handling
Sand & Gravel Mining	No	Both	Moderate	Heavy equipment, fuel storage, clandestine dumping
Aquatic Wildlife	Both	Both	Low	Microbial contaminants

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

potential sources of contamination to ground and surface water.

Agricultural Activities Recommendations:

- ✓ Continue your current work with farmers in your protection areas to make them aware of your water supply and to encourage the use of a US Natural Resources Conservation Service farm plan to protect water supplies.
- ✓ Continue your current work with hobby farmers by supplying them with information about protecting their own wells and the public water supply by encouraging the use of BMPs. Refer to <http://www.state.ma.us/dep/brp/dws/dwspubs.htm> and <http://www.state.ma.us/dep/consumer/animal.htm#dwqual> for additional resources.
- ✓ The USDA also has various funding sources for government, non-government organizations and agricultural facilities through programs such as those listed on the USDA web site <http://search.sc.egov.usda.gov/>. One program in particular, the Environmental Quality Incentives Program (EQIP) may be utilized in a variety of projects from DPW stormwater management to farm nutrient management designed to protect surface and groundwater. Review the fact sheet available on line at <http://www.nrcs.usda.gov/programs/farmbill/2002/pdf/EQIPFct.pdf> and call the local office of the NRCS for assistance.

3. **Transportation Corridor-** Route 19 is located within the IWPA of the wells. Highways are potential sources of contamination due to salting of roadways and leaks or spills of fuels and other hazardous materials during accidents.

Recommendation:

- ✓ Work with the Town to have the catch basins inspected, maintained, and cleaned on a regular schedule. Additionally, street and parking lot sweeping reduces the amount of potential contaminants in storm runoff.

4. **Sand and Gravel Mining-** A sand and gravel mining operation is located within the IWPA. Sand and gravel mining is a potential source of contamination due to the possibility of spills or leaks from heavy equipment, fuel storage, and clandestine dumping.

Recommendations:

- ✓ Use Best Management Practices for storage, use, and disposal of hazardous materials such as fuel.
- ✓ Inspect the IWPA for signs of clandestine dumping on a regular basis.

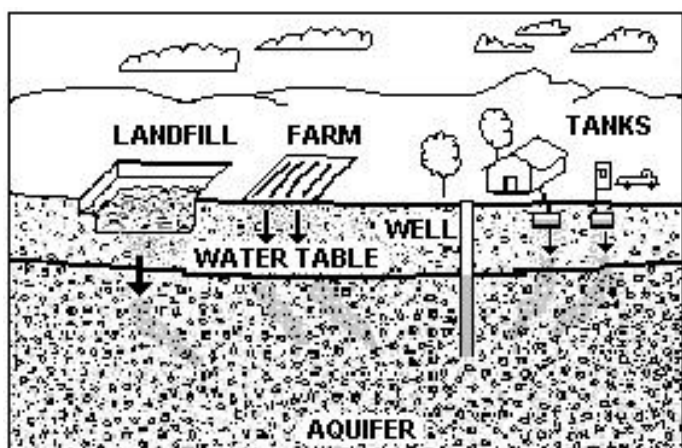


Figure 1: Example of how a well could become contaminated by different land uses and activities.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will reduce the wells' susceptibility to contamination. West Warren Water District should review and adopt the key recommendations above and the following:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated.
- ✓ Continue to conduct regular inspections of the Zone I.
- ✓ Do not use road salt within the Zone I.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 849-4030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier and town boards.

Planning:

- ✓ Work with local officials in Warren to include the water supply's IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a land use inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Agricultural:

- ✓ Consider obtaining a conservation restriction for any agricultural land within Zone I that cannot be purchased. Another option is to negotiate a "Memorandum of Understanding" (MOU) with the farmer to refrain from using pesticides and fertilizers and eliminate manure storage within Zone I.
- ✓ Encourage farmers in the IWPA to seek assistance from the Natural Resource Conservation Service (NRCS) in addressing manure management issues.

Funding:

The Department's Wellhead Protection Grant Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". For additional information, please refer to the attached program fact sheet. Please note: each program year the Department posts a new Request for Response for the Grant program (RFR). Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Wellhead Protection Grant Program Fact Sheet